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Product datasheet for RC205202

CAMK2A (NM_171825) Human Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	CAMK2A (NM_171825) Human Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	CAMK2A
Synonyms:	CAMKA; CaMKIIalpha; CaMKIINalpha; MRD53; MRT63
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)

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ORF Nucleotide Sequence:

>RC205202 ORF sequence
Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
GCCGCGATCGCC

ATGGCCACCATCACCTGCACCCGCTTCACGGAAGAGTACCAGCTCTTCGAGGAATTGGGCAAGGGAGCCT
TCTCGGTGGTGCGAAGGTGTGTGAAGGTGCTGGCTGGCCAGGAGTATGCTGCCAAGATCATCAACACAAA
GAAGCTGTCAGCCAGAGACCATCAGAAGCTGGAGCGTGAAGCCCGCATCTGCCGCCTGCTGAAGCACCCC
AACATCGTCCGACTACATGACAGCATCTCAGAGGAGGGACACCACTACCTGATCTTCGACCTGGTCACTG
GTGGGGAACTGTTTGAAGATATCGTGGCCCGGGAGTATTACAGTGAGGCGGATGCCAGTCACTGTATCCA
GCAGATCCTGGAGGCTGTGCTGCACTGCCACCAGATGGGGGTGGTGCACCGGGACCTGAAGCCTGAGAAT
CTGTTGCTGGCCTCCAAGCTCAAGGGTGCCGCAGTGAAGCTGGCAGACTTTGGCCTGGCCATAGAGGTGG
AGGGGGAGCAGCAGGCATGGTTTGGGTTTGCAGGGACTCCTGGATATCTCTCCCCAGAAGTGCTGCGGAA
GGACCCGTACGGGAAGCCTGTGGACCTGTGGGCTTGTGGGGTCATCCTGTACATCCTGCTGGTTGGGTAC
CCCCCGTTCTGGGATGAGGACCAGCACCGCCTGTACAAGCAGATCAAAGCCGGCGCCTATGATTTCCCAT
CGCCGGAATGGGACACTGTCACCCCGGAAGCCAAGGATCTGATCAATAAGATGCTGACCATTAACCCATC
CAAACGCATCACAGCTGCCGAAGCCCTTAAGCACCCCTGGATCTCGCACCGCTCCACCGTGGCATCCTGC
ATGCACAGACAGGAGACCGTGGACTGCCTGAAGAAGTTCAATGCCAGGAGGAAACTGAAGGGAGCCATTC
TCACCACGATGCTGGCCACCAGGAACTTCTCCGGAGGGAAGAGTGGGGGAAACAAGAAGAGCGATGGTGT
GAAGGAATCCTCAGAGAGCACCAACACCACCATCGAGGATGAAGACACCAAAGTGCGGAAACAGGAAATT
ATAAAAGTGACAGAGCAGCTGATTGAAGCCATAAGCAATGGAGATTTTGAGTCCTACACGAAGATGTGCG
ACCCTGGCATGACAGCCTTCGAACCTGAGGCCCTGGGGAACCTGGTTGAGGGCCTGGACTTCCATCGATT
CTATTTTGAAAACCTGTGGTCCCGGAACAGCAAGCCCGTGCACACCACCATCCTGAATCCCCACATCCAC
CTGATGGGCGACGAGTCAGCCTGCATCGCCTACATCCGCATCACGCAGTACCTGGACGCTGGCGGCATCC
CACGCACCGCCCAGTCGGAGGAGACCCGTGTCTGGCACCGCCGGGACGGCAAATGGCAGATCGTCCACTT
CCACAGATCTGGGGCGCCCTCCGTCCTGCCCCAC

ACGCGTACGCGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT
ACAAGGATGACGACGATAAGGTTTAA

Protein Sequence:

>RC205202 protein sequence
Red=Cloning site Green=Tags(s)

MATITCTRFTEEYQLFEELGKGAFSVVRRCVKVLAGQEYAAKIINTKKLSARDHQKLEREARICRLLKHP
NIVRLHDSISEEGHHYLIFDLVTGGELFEDIVAREYYSEADASHCIQQILEAVLHCHQMGVVHRDLKPEN
LLLASKLKGAAVKLADFGLAIEVEGEQQAWFGFAGTPGYLSPEVLRKDPYGKPVDLWACGVILYILLVGY
PPFWDEDQHRLYKQIKAGAYDFPSPEWDTVTPEAKDLINKMLTINPSKRITAAEALKHPWISHRSTVASC
MHRQETVDCLKKFNARRKLKGAILTTMLATRNFSGGKSGGNKKSDGVKESSESTNTTIEDEDTKVRKQEI
IKVTEQLIEAISNGDFESYTKMCDPGMTAFEPEALGNLVEGLDFHRFYFENLWSRNSKPVHTTILNPHIH
LMGDESACIAYIRITQYLDAGGIPRTAQSEETRVWHRRDGKWQIVHFHRSGAPSVLPH

TRTRPLEQKLISEEDLAANDILDYKDDDDKV

Chromatograms: https://cdn.origene.com/chromatograms/mk6515_h08.zip

Restriction Sites: SgfI-MluI

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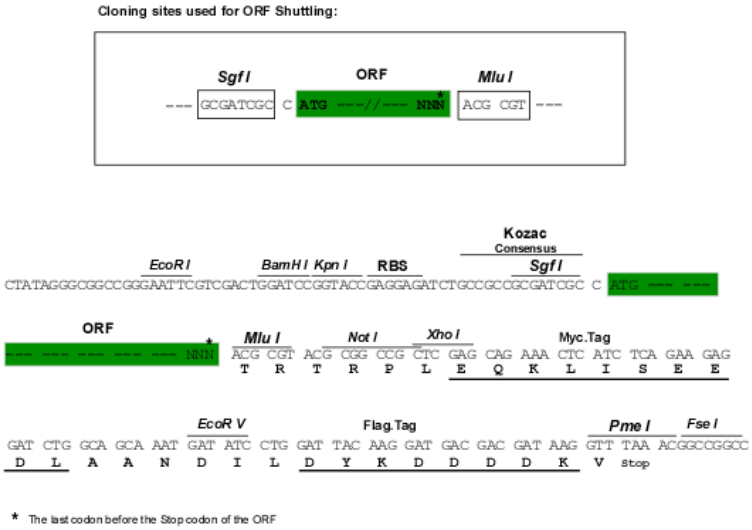
Cloning Scheme:



ACCN:	NM_171825
ORF Size:	1434 bp
OTI Disclaimer:	The molecular sequence of this clone aligns with the gene accession number as a point of reference only. However, individual transcript sequences of the same gene can differ through naturally occurring variations (e.g. polymorphisms), each with its own valid existence. This clone is substantially in agreement with the reference, but a complete review of all prevailing variants is recommended prior to use. More info
OTI Annotation:	This clone was engineered to express the complete ORF with an expression tag. Expression varies depending on the nature of the gene.
Components:	The ORF clone is ion-exchange column purified and shipped in a 2D barcoded Matrix tube containing 10ug of transfection-ready, dried plasmid DNA (reconstitute with 100 ul of water).
Reconstitution Method:	1. Centrifuge at 5,000xg for 5min. 2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA. 3. Close the tube and incubate for 10 minutes at room temperature. 4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom. 5. Store the suspended plasmid at -20°C. The DNA is stable for at least one year from date of shipping when stored at -20°C.
RefSeq:	NM_171825.2
RefSeq Size:	4885 bp
RefSeq ORF:	1437 bp
Locus ID:	815
UniProt ID:	Q9UQM7
Cytogenetics:	5q32

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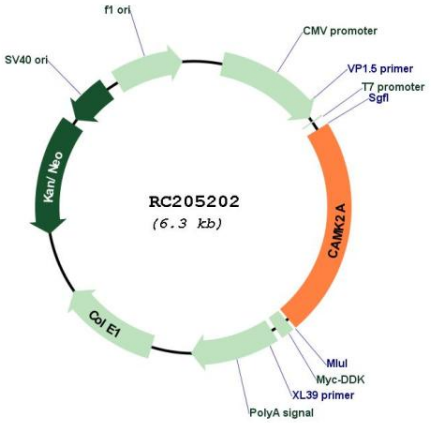
Protein Families: Druggable Genome, Protein Kinase

Protein Pathways: Calcium signaling pathway, ErbB signaling pathway, Glioma, GnRH signaling pathway, Long-term potentiation, Melanogenesis, Neurotrophin signaling pathway, Olfactory transduction, Oocyte meiosis, Wnt signaling pathway

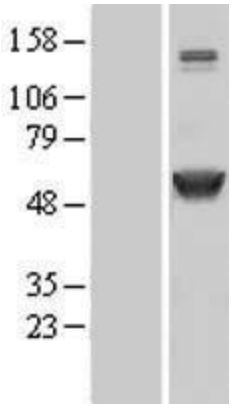
MW: 54.1 kDa

Gene Summary: The product of this gene belongs to the serine/threonine protein kinases family, and to the Ca(2+)/calmodulin-dependent protein kinases subfamily. Calcium signaling is crucial for several aspects of plasticity at glutamatergic synapses. This calcium calmodulin-dependent protein kinase is composed of four different chains: alpha, beta, gamma, and delta. The alpha chain encoded by this gene is required for hippocampal long-term potentiation (LTP) and spatial learning. In addition to its calcium-calmodulin (CaM)-dependent activity, this protein can undergo autophosphorylation, resulting in CaM-independent activity. Several transcript variants encoding distinct isoforms have been identified for this gene. [provided by RefSeq, Jun 2018]

Product images:



Circular map for RC205202



Western blot validation of overexpression lysate (Cat# [LY406882]) using anti-DDK antibody (Cat# [TA50011-100]). Left: Cell lysates from un-transfected HEK293T cells; Right: Cell lysates from HEK293T cells transfected with RC205202 using transfection reagent MegaTran 2.0 (Cat# [TT210002]).

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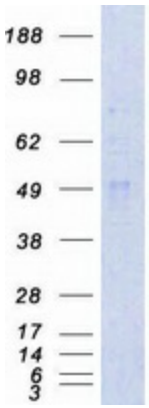

Coomassie blue staining of purified CAMK2A protein (Cat# [TP305202]). The protein was produced from HEK293T cells transfected with CAMK2A cDNA clone (Cat# RC205202) using MegaTran 2.0 (Cat# [TT210002]).

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